News Release

Defense Advanced Research Projects Agency

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JOINT UNMANNED COMBAT AIR SYSTEMS SUCCESSFULLY COMPLETES X-45A TEST FLIGHT PROGRAM

After completing more than 60 flights, the Joint Unmanned Combat Air Systems (J-UCAS) X-45A flight test program concluded yesterday with the successful completion of a preemptive destruction suppression of enemy air defenses graduation demonstration.

During this demonstration, the two X-45A air vehicles flew the most complex mission scenario to date. The significant tasks completed included: detecting multiple simulated threats; determining which targets were off-limits and which had the highest priority; avoiding simulated "pop-up" threats; replanning attacks when the operator altered target priorities; and performing coordinated multi-ship attacks on multiple targets. After successfully demonstrating each of these capabilities, the two air vehicles safely returned to base.

"This foundational program claims many firsts, but one result stands out over all others – the X-45A team did it all safely, completing 64 ground-breaking flights without a mishap," said CAPT Ralph N. Alderson, USN, program manager of the JUCAS X-45 program. "Not many unmanned aerial vehicle programs can make that claim – this team set a new standard."

The X-45A team has been making history in the desert for several years. Under the careful oversight of NASA's Dryden Flight Research Center, Edwards AFB, Calif., and with the Air Force Flight Test Center's continuing assistance, the J-UCAS team has risen to the challenge of achieving the Defense Advanced Research Project Agency's very aggressive goals for these first unmanned combat air vehicle (UCAV) demonstrators.

Since the X-45A first took flight in May 2002, the flight test program has continued to advance the state of the art in unmanned aviation, demonstrating a number of capabilities necessary for successful mission operations. Many also rank as first-of-a-kind in aviation history, including:

- Weapons Release Demonstration, April 4, 2004 – deployment of a GPS-guided weapon from a UCAV;
- Multi-Vehicle Operations Demonstration, August 1, 2004 – operation of two X-45A UCAVs by a single operator;
- Multi-Vehicle Distributed Control Demonstration, July 14, 2005 – in-flight transfer of operator control of two air vehicles to another control station nearly 900 miles away during beyond-line-of-sight flight operations;

(more)

- Multi-Vehicle Reactive Suppression of Enemy Air Defenses Demonstration, February 4, 2005 – two X-45As autonomously respond to simulated "pop-up" threats and, with operator consent, engage those threats, including simulating weapons release and battle damage assessment against the targets.

"This demonstration concludes an exciting and precedent-setting time. The J-UCAS program has made significant strides in developing an unmanned air system that is changing the nature of air combat," said Dr. Michael S. Francis, director of the J-UCAS program. "The pioneering efforts of the X-45A program have been critical in the quest to create a capability that is effective even in the most dangerous, denied environments."

Efforts are currently underway to develop the next generation of UCAV demonstration systems, the Boeing X-45C and the Northrop Grumman X-47B. These air vehicles, when with combined functionality provided by the J-UCAS Common Operating System, will allow for a robust Operational Assessment to begin in the spring of 2007. The software used and tested on the X-45A may be offered as a candidate for functionality in the development of the program's Common Operating System.

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The J-UCAS program is a joint Defense Advanced Research Projects Agency/U.S. Air Force/U.S. Navy effort to demonstrate the technical feasibility, military utility, and the operational value of a networked system of high-performance, weaponized, unmanned air vehicles to effectively and affordably execute combat missions. The J-UCAS Common Operating System will allow unmanned aircraft systems to intra-operate with each other and with the Global Information Grid. The J-UCAS system-of-systems concept plans to demonstrate the military utility and the operational value of airpower in the 21st century combat environment. More information on the J-UCAS program can be found at http://www.darpa.mil/j-ucas .

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